coiling element which controls a pitch of the coil spring, a first drive by which first positions or first orientations of the first coiling element can be altered, a second drive by which second positions or second orientations of the second coiling element can be altered,

an encapsulation section in which the coil spring is inserted between juxtaposed sheets of material and in which the sheets of material are joined together to form a pocket enclosing the coil spring, and

B1

a programmable control system operably linked to said first and second drives to alter the first positions or the first orientations of said first coiling element and the second positions or the second orientations of said second coiling element as the wire is fed through said coiling section, a profile of a coil spring being defined by movement of said first coiling element and said second coiling element as the wire is fed through said coiling section, said programmable control system comprising a plurality of stored data arrays or tables, each data array or table has a coil spring profile representing a plurality of the first positions or a plurality of the first orientations of said first coiling element and a plurality of the second positions or a plurality of the second orientations of said second coiling element for a particular coil spring configuration, said programmable control system having a profile selection system that selects at least one of the plurality of the data arrays or the tables corresponding to selected spring profiles that the programmable control system uses to alter said first and second coiling elements.

2. (Amended) Apparatus as claimed in Claim 1, wherein the programmable control system comprises a programmable logic controller by which computer-numerical-control of the coiling section is achieved.

3. (Amended) Apparatus as claimed in Claim 2, wherein the programmable logic controller is operably linked to a third drive by which the wire feed can be controlled.

4. (Amended) Apparatus as claimed in Claim 3, wherein said first, second and third drive each comprise a servo-motor.

6. (Twice Amended) Apparatus as claimed in Claim 1, wherein one or more

B2

electromagnets are mounted at the exit of the coiling section, said one or more electromagnets engaging each spring as it leaves the coiling section to substantially dampen

excessive oscillation in each spring, said spring being mechanically drawn away from said one or more electromagnets as said spring is conveyed to the encapsulation section.

7. (Twice Amended) Apparatus as claimed in Claim 1, wherein the programmable control system is also operably linked to the encapsulation section, to control movement of material through the encapsulation section.

8. (Amended) Apparatus as claimed in Claim 7, wherein a servo motor operably linked to the programmable control system controls movement of the material through the encapsulation section, such that said material is advanced in increments corresponding to a desired pocket width.

B2

9. (Twice Amended) Apparatus as claimed in Claim 1, wherein a mechanism by which the springs are transferred to the encapsulation section and inserted between the sheets of material comprises:

a rotating wheel with radially extending arms, successively formed springs being engaged by successive arms of said wheel;

a spring compression system that compresses the springs as they are conveyed to the encapsulation section on the arms of said rotating wheel; and

a reciprocating cassette into which the compressed springs are delivered by said wheel and within which the compressed springs are transported to the encapsulation section.

10. (Twice Amended) Apparatus as claimed in Claim 1, further comprising ultrasonic welding units by which the sheets of material are joined together to form pockets.

11. (Amended) Apparatus as claimed in Claim 10, wherein said ultrasonic welding units comprises longitudinal welding units arranged parallel to the longitudinal axis of the sheets of material and transverse welding units arranged transverse to said axis.

12. (Twice Amended) Apparatus as claim in Claim 10, wherein said ultrasonic welding units comprises ultrasonic welding horns with castellated lower edges.

13. (Amended) Apparatus as claimed in Claim 11, wherein said transverse welding units comprises a pair of welding horns arranged colinearly.

B2

14. (Twice Amended) Apparatus as claimed in Claim 12, further comprising a positioning system that alters a position of the transverse welding units on said longitudinal axis of said sheets of material.

15. (Twice Amended) Apparatus as claimed in Claim 10, wherein the ultrasonic welding units comprise ultrasonic welding horns, at least one of which acts against a fixed anvil provided with a surface coating which acts as a cushion for said welding horn.

B3

18. (Twice Amended) Apparatus as claimed in Claim 1, wherein said sheets of material are drawn through the encapsulation section by a pair of horizontally disposed rollers, at least one of which is driven by a servo motor controlled by the programmable control system.

B4

20. (Twice Amended) Apparatus as claimed in Claim 1, wherein said encapsulation section further comprises a transport system for drawing said sheets of material incrementally through the encapsulation section and a welding system that welds the sheets of material together,

wherein the transport system and the welding system are controlled by the programmable control system.

21. (Amended) A method of producing a pocketed coil spring, the method comprising:

feeding wire through a coiling section so as to form a coil,

selecting at least one of a plurality of spring profiles obtained from data arrays or tables stored in a programmable control system, each selected spring profile represents a plurality of positions or orientations of the coiling elements of said coiling section for a particular spring configuration,

using the programmable control system to alter the positions or the orientations of the coiling elements to control the diameter and the pitch of the coil as the wire is fed through said coiling section according to the selected spring profiles,

B4

separating said coil from said wire,

compressing said coil,

inserting said coil between juxtaposed sheets of material, and

joining said sheets of material together so as to encapsulate said coil.

B5

23. (Twice Amended) A method as claimed in Claim 21, wherein the positions or orientations of the coiling elements are set by one or more servo motors operating under control of the programmable control system.

24. (Twice Amended) A pocketed coil spring assembly having a plurality of different pitches in a middle portion between end portions of the coil which is produced in accordance with the method of Claim 21.